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Exhibit R-2, RDT&E Budget Item Justification: PB 2012 Air Force									DATE: February 2011		
APPROPRIATION/BUDGET ACTIVITY 3600: Research, Development, Test & Evaluation, Air Force BA 5: Development & Demonstration (SDD)				R-1 ITEM NOMENCLATURE PE 0604853F: Evolved Expendable Launch Vehicle - EMD							
COST (\$ in Millions)	FY 2010	FY 2011	FY 2012 Base	FY 2012 OCO	FY 2012 Total	FY 2013	FY 2014	FY 2015	FY 2016	Cost To Complete	Total Cost
Total Program Element	43.945	30.245	20.028	-	20.028	7.965	7.963	-	-	Continuing	Continuing
650004: Evolved Expendable Launch Vehicle	43.945	30.245	20.028	-	20.028	7.965	7.963	-	-	Continuing	Continuing

## Note

The program funding includes overhead reduction efficiencies that are not intended to impact program content. The efficiencies reductions total \$.059M in FY12.

## A. Mission Description and Budget Item Justification

The Evolved Expendable Launch Vehicle (EELV) program is a space launch system developed to provide two families of launch vehicles, Delta IV & Atlas V. The program satisfies the government's National Launch Forecast (NLF) requirements. EELV is a launch service, not a weapon system, which is primarily funded with production funds. EELV is responsible for launching government manifested payloads, including those once supported by Titan II, Delta II, Atlas II/III, and Titan IV. Evolved from heritage expendable launch systems and new applications of existing technology, EELV supports military, intelligence, civil, commercial, and international partnership mission requirements.

The program has developmental items including: qualification of the extended mission kit, fleet standardization of the RS-68 main engine upgrade, Pre-Planned Product Improvements to ensure sustainability (includes, but is not limited to, secondary payload adaptor standard service, Global Positioning System (GPS) Metric Tracking capability, development of replacement components, flight and ground instrumentation), special studies, and other related support activities.

As of 21 August 2007, the EELV Program has formally entered the sustainment phase. As of 31 October 2007, Air Force Space Command formally extended the EELV Program an additional 10 years, from 2020 through 2030. This program element is in Budget Activity 5, System Development and Demonstration, because it supports development and demonstration of the EELV concept leading to deployment of a lower cost expendable launch vehicle system.

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<b>APPROPRIATION/BUDGET ACTIVITY</b> 3600: <i>Research, Development, Test &amp; Evaluation, Air Force</i> BA 5: <i>Development &amp; Demonstration (SDD)</i>	<b>R-1 ITEM NOMENCLATURE</b> PE 0604853F: <i>Evolved Expendable Launch Vehicle - EMD</i>
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<b>B. Program Change Summary (\$ in Millions)</b>	<b>FY 2010</b>	<b>FY 2011</b>	<b>FY 2012 Base</b>	<b>FY 2012 OCO</b>	<b>FY 2012 Total</b>
Previous President's Budget	43.945	30.245	4.333	-	4.333
Current President's Budget	43.945	30.245	20.028	-	20.028
Total Adjustments	-	-	15.695	-	15.695
• Congressional General Reductions		-			
• Congressional Directed Reductions		-			
• Congressional Rescissions	-	-			
• Congressional Adds		-			
• Congressional Directed Transfers		-			
• Reprogrammings	-	-			
• SBIR/STTR Transfer	-	-			
• Other Adjustments	-	-	15.695	-	15.695

**Congressional Add Details (\$ in Millions, and Includes General Reductions)**

**Project:** 650004: *Evolved Expendable Launch Vehicle*

Congressional Add: *Common RL-10*

	<b>FY 2010</b>	<b>FY 2011</b>
	20.000	-
Congressional Add Subtotals for Project: 650004	20.000	-
Congressional Add Totals for all Projects	20.000	-

**Change Summary Explanation**

FY12: \$15.695M added for an enhanced Flight Termination System that will meet National Security Agency coding standards.

The program funding includes overhead reduction efficiencies that are not intended to impact program content. The efficiencies reductions total \$0.059M in FY12.

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Exhibit R-2A, RDT&E Project Justification: PB 2012 Air Force									DATE: February 2011		
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COST (\$ in Millions)	FY 2010	FY 2011	FY 2012 Base	FY 2012 OCO	FY 2012 Total	FY 2013	FY 2014	FY 2015	FY 2016	Cost To Complete	Total Cost
650004: Evolved Expendable Launch Vehicle	43.945	30.245	20.028	-	20.028	7.965	7.963	-	-	Continuing	Continuing
Quantity of RDT&E Articles	0	0	0	0	0	0	0	0	0		

**A. Mission Description and Budget Item Justification**

The Evolved Expendable Launch Vehicle (EELV) program is a space launch system developed to provide two families of launch vehicles, Delta IV & Atlas V. The program satisfies the government's National Launch Forecast (NLF) requirements. EELV is a launch service, not a weapon system, which is primarily funded with production funds. EELV is responsible for launching government manifested payloads, including those once supported by Titan II, Delta II, Atlas II/III, and Titan IV. Evolved from heritage expendable launch systems and new applications of existing technology, EELV supports military, intelligence, civil, commercial, and international partnership mission requirements.

The program has developmental items including: qualification of the extended mission kit, fleet standardization of the RS-68 main engine upgrade, Pre-Planned Product Improvements to ensure sustainability (includes, but is not limited to, secondary payload adaptor standard service, Global Positioning System (GPS) Metric Tracking capability, development of replacement components, flight and ground instrumentation), special studies, and other related support activities.

As of 21 August 2007, the EELV Program has formally entered the sustainment phase. As of 31 October 2007, Air Force Space Command formally extended the EELV Program an additional 10 years, from 2020 through 2030. This program element is in Budget Activity 5, System Development and Demonstration, because it supports development and demonstration of the EELV concept leading to deployment of a lower cost expendable launch vehicle system.

**B. Accomplishments/Planned Programs (\$ in Millions)**

	<b>FY 2010</b>	<b>FY 2011</b>	<b>FY 2012 Base</b>	<b>FY 2012 OCO</b>	<b>FY 2012 Total</b>
<b>Title:</b> EELV RDT&E	23.945	30.245	20.028	-	20.028
<b>Description:</b> Fund EELV product improvements, replacement components, system enhancements, and special studies to allow EELV to meet National Launch Forecast requirements through 2030.					
<b>FY 2010 Accomplishments:</b> Continued fleet-wide integration and certification of RS-68 upgrade. Continued development and qualification of the Atlas V extended mission kit. Continued P3I efforts to include but not limited to development of secondary payload standard efforts, development of replacement components, flight and ground instrumentation, and special studies.					
<b>FY 2011 Plans:</b>					

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B. Accomplishments/Planned Programs (\$ in Millions)							FY 2010	FY 2011	FY 2012 Base	FY 2012 OCO	FY 2012 Total
Continued fleet-wide integration and certification of RS-68 upgrade. Continued development of GPS metric tracking system. Continued P3I efforts to include but not limited to development of secondary payload standard efforts, development of replacement components, flight and ground instrumentation, and special studies. <b>FY 2012 Base Plans:</b> Continue fleet-wide integration and certification of RS-68 upgrade. Complete development of secondary payload standard service. Complete GPS metric tracking development and conduct flight certifications. Continue P3I efforts, to include, but not limited to, development of replacement components, flight and ground instrumentation to include upgraded flight termination system (SLFTS), and conduct special studies. <b>FY 2012 OCO Plans:</b>											
Accomplishments/Planned Programs Subtotals							23.945	30.245	20.028	-	20.028
							FY 2010	FY 2011			
Congressional Add: Common RL-10 <b>FY 2010 Accomplishments:</b> Phase 1 study effort through March 2011. <b>FY 2011 Plans:</b>							20.000	-			
Congressional Adds Subtotals							20.000	-			
C. Other Program Funding Summary (\$ in Millions)											
Line Item	FY 2010	FY 2011	FY 2012 Base	FY 2012 OCO	FY 2012 Total	FY 2013	FY 2014	FY 2015	FY 2016	Cost To Complete	Total Cost
• PE 0305953F: Evolved Expendable Launch Vehicle, MPAF (BA 05, P-28).	1,094.787	1,153.976	1,740.222	0.000	1,740.222	1,744.243	2,034.102	2,098.865	2,222.604	Continuing	Continuing
D. Acquisition Strategy											
The EELV concept of families of launch vehicles emphasizes commonality of hardware and infrastructure to enhance production, operations, and support efficiencies. Four initial contracts were awarded for the Low Cost Concept Validation (LCCV) phase in August 1995. The Air Force downselected to two contractors - The Boeing Company (TBC) and Lockheed Martin (LM) - for the Pre-Engineering and Manufacturing Development (Pre-EMD) phase in December 1996. In 1998, two \$500M Other Transaction Agreements (OTA) were awarded to TBC and LM for the development effort. The contractors contributed funds of their own, estimated in excess of											

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<b>Exhibit R-2A, RDT&amp;E Project Justification:</b> PB 2012 Air Force		<b>DATE:</b> February 2011
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<p>\$4.5B, to bring their national launch operational capability on line. At the same time as the award of the development effort, Initial Launch Services (ILS) contracts were awarded to Boeing for 19 missions and to Lockheed Martin for 9 missions.</p> <p>All ILS (Buy 1/awarded) launch services are firm-fixed price contracts. Due to the decrease in the commercial market, the projected costs of the unawarded EELV launches have increased. The current acquisition strategy, implemented in FY06, separates the launch service price from the infrastructure costs. Follow-on (Buy 3) Launch Service procurements include launch service costs on a fixed-price contract. EELV Launch Capability infrastructure costs (includes launch and range operations, mission integration, mission unique development and integration, subcontract support engineering, factory engineering, etc.) are funded on an annual basis via a cost-plus, award-fee contract. The 2005 Space System Acquisition Strategy (SSAS) for EELV documents this modified approach to provide assured access to space with two viable launch vehicle families.</p> <p>The acquisition approach supports the 2004 National Space Transportation Policy. The EELV system will launch the majority of the government portion of the NLF through 2030 and the government will continue to work to partner with industry to continuously improve products and processes to enhance reliability and reduce both the contractor's and government's total costs. The Air Force is evaluating the addition of other potential EELV suppliers.</p> <p>In December 2006, TBC and LM initiated a joint venture, the United Launch Alliance (ULA), with the approval of the Federal Trade Commission. ULA will continue mission success and assure access to space with two launch vehicle systems by combining Delta IV/Atlas V management and engineering in Denver, CO; combining most of the manufacturing in Decatur, AL; and combining launch teams at both launch sites.</p> <p>As of 21 August 2007, the EELV program has formally entered the sustainment phase. As of 31 Oct 2007, Air Force Space Command formally extended the EELV Program an additional 10 years, from 2020 through 2030.</p> <p><b><u>E. Performance Metrics</u></b></p> <p>Please refer to the Performance Base Budget Overview Book for information on how Air Force resources are applied and how those resources are contributing to Air Force performance goals and most importantly, how they contribute to our mission.</p>		

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Exhibit R-3, RDT&E Project Cost Analysis: PB 2012 Air Force											DATE: February 2011			
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Product Development (\$ in Millions)				FY 2011		FY 2012 Base		FY 2012 OCO		FY 2012 Total				
Cost Category Item	Contract Method & Type	Performing Activity & Location	Total Prior Years Cost	Cost	Award Date	Cost	Award Date	Cost	Award Date	Cost	Cost To Complete	Total Cost	Target Value of Contract	
Delta Prime Contractor	C/FFP	Boeing:Huntington Beach, CA	710.182	-		-		-		-	0.000	710.182	0.000	
Atlas Prime Contractor	C/FFP	Lockheed Martin:Denver, CO	583.511	-		-		-		-	0.000	583.511	0.000	
United Launch Alliance (ULA) Prime Contractor	SS/CPIF	ULA:Decatur, AL	86.823	24.396	Oct 2010	18.028	Oct 2011	-		18.028	14.012	143.259	TBD	
Subtotal			1,380.516	24.396		18.028		-		18.028	14.012	1,436.952		
Support (\$ in Millions)				FY 2011		FY 2012 Base		FY 2012 OCO		FY 2012 Total				
Cost Category Item	Contract Method & Type	Performing Activity & Location	Total Prior Years Cost	Cost	Award Date	Cost	Award Date	Cost	Award Date	Cost	Cost To Complete	Total Cost	Target Value of Contract	
SPO/CTF Range Mission Spt	Various	Space and Missile Center:Los Angeles AFB, CA	43.617	-		-		-		-	0.000	43.617	0.000	
FFRDC	SS/CPAF	Aerospace:El Segundo, CA	70.989	3.994	Oct 2010	2.000	Oct 2011	-		2.000	1.598	78.581	0.000	
Other Cntr Spt	Various	Various:Various,	18.562	1.855		-		-		-	0.000	20.417	TBD	
Subtotal			133.168	5.849		2.000		-		2.000	1.598	142.615		
Test and Evaluation (\$ in Millions)				FY 2011		FY 2012 Base		FY 2012 OCO		FY 2012 Total				
Cost Category Item	Contract Method & Type	Performing Activity & Location	Total Prior Years Cost	Cost	Award Date	Cost	Award Date	Cost	Award Date	Cost	Cost To Complete	Total Cost	Target Value of Contract	
Subtotal			-	-		-		-		-	0.000	0.000	0.000	
Management Services (\$ in Millions)				FY 2011		FY 2012 Base		FY 2012 OCO		FY 2012 Total				
Cost Category Item	Contract Method & Type	Performing Activity & Location	Total Prior Years Cost	Cost	Award Date	Cost	Award Date	Cost	Award Date	Cost	Cost To Complete	Total Cost	Target Value of Contract	
Subtotal			-	-		-		-		-	0.000	0.000	0.000	

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				Total Prior Years Cost	FY 2011		FY 2012 Base		FY 2012 OCO		FY 2012 Total	Cost To Complete	Total Cost	Target Value of Contract
Project Cost Totals				1,513.684	30.245		20.028		-		20.028	15.610	1,579.567	

**Remarks**

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<b>Exhibit R-4, RDT&amp;E Schedule Profile:</b> PB 2012 Air Force		<b>DATE:</b> February 2011
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<b>Exhibit R-4A, RDT&amp;E Schedule Details:</b> PB 2012 Air Force			<b>DATE:</b> February 2011
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Schedule Details

Events	Start		End	
	Quarter	Year	Quarter	Year
Pre-Planned Product Improvement (P3I): Secondary Payload Standard Service	1	2010	1	2012
Pre-Planned Product Improvement (P3I): GPS Metric Tracking Development	1	2010	1	2012
Pre-Planned Product Improvement (P3I): GPS Metric Tracking Delta IV West Coast certification flight	2	2012	3	2012
Fleet Standardization (RS-68 Upgrade implementation)	1	2010	4	2011
Fleet Standardization - Critical Design Review	1	2012	2	2012
Fleet Standardization - Demonstration implementation	4	2012	1	2013
Common upper stage (RL-10) Phase 1 study	3	2010	1	2011
Common Upper Stage (RL-10) engine CDR	2	2011	3	2011
Pre-planned Product Improvement: Enhanced Flight Termination System	1	2012	4	2014

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